

## KVR16LR11D4K3/48

48GB (16GB 2Rx4 2G x 72-Bit x 3 pcs.) PC3L-12800  
CL11 Registered w/Parity 240-Pin DIMM Kit

### DESCRIPTION

ValueRAM's KVR16LR11D4K3/48 is a kit of three 2G x 72-bit (16GB) DDR3L-1600 CL11 SDRAM (Synchronous DRAM), registered w/parity, low voltage, 2Rx4 ECC, memory modules, based on thirty-six 1G x 4-bit FBGA components per module. Total kit capacity is 48GB. The SPDs are programmed to JEDEC standard latency DDR3-1600 timing of 11-11-11 at 1.35V or 1.5V. Each 240-pin DIMM uses gold contact fingers. The electrical and mechanical specifications are as follows:

### FEATURES

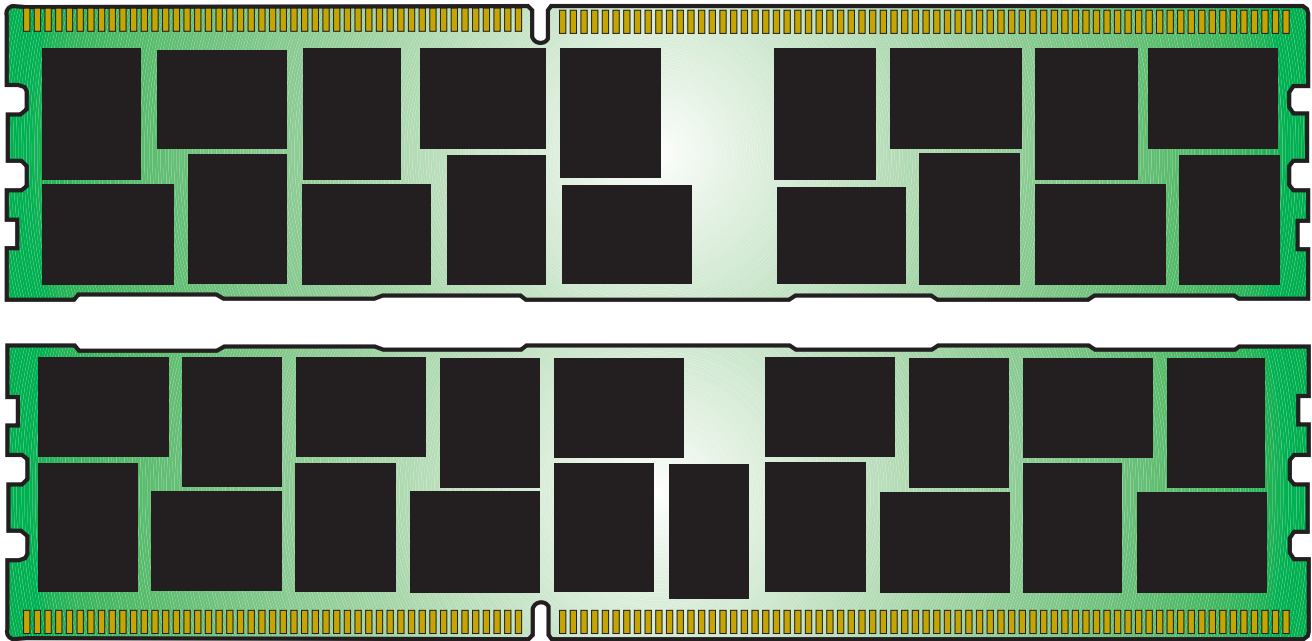
- JEDEC standard 1.35V (1.28V ~ 1.45V) and 1.5V (1.425V ~ 1.575V) Power Supply
- VDDQ = 1.35V (1.28V ~ 1.45V) and 1.5V (1.425V ~ 1.575V)
- 800MHz fCK for 1600Mb/sec/pin
- 8 independent internal bank
- Programmable CAS Latency: 11, 10, 9, 8, 7, 6
- Programmable Additive Latency: 0, CL - 2, or CL - 1 clock
- 8-bit pre-fetch
- Burst Length: 8 (Interleave without any limit, sequential with starting address "000" only), 4 with tCCD = 4 which does not allow seamless read or write [either on the fly using A12 or MRS]
- Bi-directional Differential Data Strobe
- Internal(self) calibration : Internal self calibration through ZQ pin (RZQ : 240 ohm  $\pm$  1%)
- On Die Termination using ODT pin
- On-DIMM thermal sensor (Grade B)
- Average Refresh Period 7.8us at lower than TCASE 85°C, 3.9us at 85°C < TCASE  $\leq$  95°C
- Asynchronous Reset
- PCB : Height 1.180" (30.00mm), double sided component

### SPECIFICATIONS

CL(IDD)	11 cycles
Row Cycle Time (tRCmin)	48.125ns (min.)
Refresh to Active/Refresh Command Time (tRFCmin)	260ns (min.)
Row Active Time (tRASmin)	35ns (min.)
Maximum Operating Power	(1.35V) = TBD W* (Per module)
UL Rating	94 V - 0
Operating Temperature	0° C to 85° C
Storage Temperature	-55° C to +100° C

\*Power will vary depending on the SDRAM and Register/PLL used.

Continued >>

**MODULE DIMENSIONS:**

(Units = millimeters)

